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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/085,498      | 02/26/2002  | Woo Sik Yoo          | M-11549 US          | 8701             |

7590 07/30/2004

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| EXAMINER |
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JOLLEY, KIRSTEN

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| ART UNIT | PAPER NUMBER |
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1762

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                        |                                      |                                     |  |
|------------------------|--------------------------------------|-------------------------------------|--|
| <b>Advisory Action</b> | <b>Application No.</b><br>10/085,498 | <b>Applicant(s)</b><br>YOO, WOO SIK |  |
|                        | <b>Examiner</b><br>Kirsten C Jolley  | <b>Art Unit</b><br>1762             |  |

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 07 July 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See attached action.

3. ☒ Applicant's reply has overcome the following rejection(s): 35 USC 112, 1<sup>st</sup> paragraph.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☐ The a) ☐ affidavit, b) ☐ exhibit, or c) ☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: \_\_\_\_\_.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: 1-20.

Claim(s) withdrawn from consideration: 21-31.

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.
10. ☐ Other: \_\_\_\_\_

### ADVISORY ACTION

1. The proposed amendments will not be entered because they would require further consideration and/or search. Specifically, in claim 12, as proposed, step (b) is confusing because it requires "heating said outgassed layer of SOG *and* said first layer of SiO<sub>2</sub> to a second process temperature ... to cure said outgassed layer of SOG *and* said first layer of SiO<sub>2</sub>" [emphasis added]. The use of the word "and" when referring to "said outgassed layer of SOG" and "said first layer of SiO<sub>2</sub>" reads as two separate layers (outgassed SOG and SiO<sub>2</sub>) formed from heating of the first layer. However, the specification and the claims as originally filed disclose that the outgassed SOG layer and formed layer of SiO<sub>2</sub> are one and the same -- i.e., the SiO<sub>2</sub> is formed from outgassed SOG. Claim 13 contains similar confusing claim language.
2. Applicant's arguments have overcome the 35 USC 112, 1<sup>st</sup> paragraph rejection and the rejection will be withdrawn upon Appeal.
3. Applicant's arguments filed July 7, 2004 have been considered but are not persuasive. Applicant argues that Yang does not disclose or suggest any process pressure for the disclosed heating steps. Instead, Yang discloses the use of a "reducing atmosphere" during a curing step. It is noted that by reducing atmosphere, Yang is referring to a chemically-reducing atmosphere such as hydrogen gas. Also, while Yang discloses vacuum pumping the atmosphere before processing, Yang teaches that this step is performed to assure the quality of the gas environment, i.e., ensure that the ambient oxygen-containing air is removed from the process chamber and only reducing gas (hydrogen or nitrogen) is present.

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Applicant argues that the Examiner is using impermissible hindsight and making an assumption regarding the use of atmospheric pressure for oxide formation as disclosed in Yang. The Examiner disagrees. The *first* assumption used by one having ordinary skill in the art, when a reference lacks a teaching of using a particular pressure, is the use of atmospheric pressure. In the *absence* of a teaching to use a pressure *other* than atmospheric pressure (either higher or lower), it would have clearly been obvious for one having ordinary skill in the art to have performed the process at atmospheric pressure, for reasons disclosed in the Office action (because atmospheric pressure is the simplest and most economical to use in terms of equipment and materials needs, power supply, etc.) and more.


Applicant also argues that Yang discloses that a preheat step is used to remove solvents by evaporation and then the film is converted to silicon dioxide during a subsequent heating step, therefore Yang teaches away from forming a processed layer of SiO<sub>2</sub> in heating to the first process temperature. The Examiner disagrees. The first heating step of Yang necessarily causes its coating layer to outgas and form a processed layer of SiO<sub>2</sub> since the materials and process steps of Yang are materially similar to those claimed by Applicant and taught in the instant specification.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on 571-272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Kirsten C Jolley  
Patent Examiner  
Art Unit 1762

kcj